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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,167	07/23/2001	Susan Ciaburro	PA-Y1015	3969

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EXAMINER	
LEE, JOHN J	

ART UNIT	PAPER NUMBER
2684	5

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/912,167	CIABURRO ET AL.	
	Examiner	Art Unit	
	JOHN J LEE	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1 – 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Norin et al. (US Patent number 6,157,817) in view of Norin (US Patent number 6,233,433).

Regarding **claim 1**, Norin (817) discloses that a method of testing a satellite (Fig. 1) receive antenna (4 in Fig. 1) of a multibeam satellite system (Fig. 1 and column 3, lines 47 – column 4, lines 24). Norin (817) discloses that uplinking a test signal (3 in Fig. 1) from a payload test earth station (Fig. 1) to the receive antenna (4 in Fig. 1) (Fig. 1 and column 4, lines 5 – 50). Norin (817) discloses that slewing the satellite over orientation angles using a slow constant attitude translation (Fig. 1, 2, abstract, and column 4, lines 5 – 24, where teaches the satellite's position is slewed over angles approximately covering the receive antenna areas of reception). Norin (817) discloses that sensing a power level of the test signal on-board the satellite during slewing (Fig. 1, 2, abstract, and column 4, lines 5 – column 5, lines 13, where teaches telemetry circuitry onboard the satellite senses the power levels of the signals and keeps track if the onboard equipment). Norin (817) discloses that transmitting downlink telemetry comprising sensed power level and orientation angles of the satellite from the satellite to the payload test earth station (Fig. 1,

2 and column 3, lines 47 – column 4, lines 23, where teaches the satellite transmits downlink telemetry, power levels, angles, and other data to transmission back to earth). Norin (817) discloses that processing the sensed power level and said orientation angles to verify the operation of said receive antenna on the satellite (column 4, lines 25 – column 5, lines 13 and Fig. 1, 2, where teaches the satellite receive antenna configures and processes the slewing angles and sensed power levels).

Norin (817) does not specifically disclose the limitation "transmitting downlink telemetry from the satellite **to a telemetry and command earth station** that is located at a geographically separate location from the payload test earth station". However, Norin (433) discloses the limitation "transmitting downlink telemetry from the satellite **to a telemetry and command earth station** that is located at a geographically separate location from the payload test earth station" (column 1, lines 44 – 48, Fig. 4, 5, and column 4, lines 14 – column 5, lines 17, where teaches prior tests required an uplink signal to be transmitted from multiple uplink sites and downlink signals were received at test stations within each downlink beam). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Norin (817) system as taught by Norin (433), Thus allowing measurements at multiple points in coverage area, as discussed by Norin (433), (column 1, lines 50 – 55).

Regarding **claim 2**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claim 1. Furthermore, Norin (817) further discloses that processing the noise power level and orientation angles to verify operation of the transmit antenna (24 in Fig. 1) on the satellite (column 4, lines 14 – column 5, lines 17 and Fig. 4, 5). However, Norin

(817) does not specifically disclose the limitation "measuring downlink noise in a small bandwidth at the telemetry and command earth station while the satellite is translated". However, Norin (433) discloses the limitation "measuring downlink noise in a small bandwidth at the telemetry and command earth station while the satellite is translated" (column 4, lines 14 – column 5, lines 23, abstract, and Fig. 4, 5, where teaches received downlink signal is measured and recorded the signal information, power level within each downlink band, for reducing possibility of adding unwanted noise). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Norin (817) system as taught by Norin (433). The motivation do so would be to achieve reducing unwanted noise by performing in-orbit satellite tests in satellite communication system.

Regarding **claim 3**, Norin (817) discloses that the uplinked commands cause a slow constant attitude translation of the satellite (column 4, lines 5 – 24 and Fig. 1).

Regarding **claim 4**, Norin (817) discloses that the uplinked commands cause a discrete steps (power levels) in attitude translation of the satellite (column 4, lines 5 – 39 and Fig. 1).

Regarding **claim 5**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 1 and 2. Furthermore, Norin (817) further discloses that positioning an uplink beam is over an earth station (column 2, lines 36 – column 3, lines 2 and Fig. 1). Norin (817) teaches that uplinking signals at different frequencies of interest from the earth station to the satellite (column 6, lines 4 – 33 and Fig. 5, 6, where teaches received uplink signals of different respective frequencies from ground station). Norin (817)

teaches that generating downlink telemetry on-board the satellite that corresponds to the signal strengths of respective signals at the different frequencies (column 4, lines 5 – 64, Fig. 1, 6 and column 6, lines 4 – 33, where teaches computer generate downlink telemetry (power levels) of different respective frequencies). Norin (817) teaches that recording the signal strength telemetry and uplink frequency at the earth station (column 4, lines 25 – 64 and Fig. 1, where teaches the ground station stores the translated position and signal information from telemetry data stream). Norin (817) teaches that processing the recorded signal strength telemetry and uplink frequency to produce the input power frequency response curve (column 4, lines 25 – 64 and Fig. 1, where teaches the ground station stores the translated position and signal information from telemetry data stream for processing, computer plots the power levels as a function of the satellite's position to produce a map of the receive antenna pattern).

Regarding **claims 6 and 8**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 1 and 2.

Regarding **claim 7**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 1 and 5. Furthermore, Norin (817) further discloses that processing the recorded signal strength telemetry to produce the input chain transfer curve corresponding to input power frequency response (column 4, lines 25 – 64 and Fig. 1, 3f, where teaches the ground station stores the translated position and signal information from telemetry data stream for processing, computer plots the power levels as a function of the satellite's position to produce a map of the receive antenna pattern).

Regarding **claim 9**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 2 and 7. However, Norin (817) does not specifically disclose the limitation "measuring noise power of the downlink beam over a small bandwidth centered around a plurality of selected frequency of interest at the earth station". However, Norin (433) discloses the limitation "measuring noise power of the downlink beam over a small bandwidth centered around a plurality of selected frequency of interest at the earth station" (column 4, lines 14 – column 5, lines 23, abstract, and Fig. 3, 4, where teaches received downlink signal, that switched for selecting the sampled signals to be combined to produce a single combined signal/beam, is measured and recorded the signal information, power level within each downlink band, for reducing possibility of adding unwanted noise). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Norin (817) system as taught by Norin (433). The motivation do so would be to achieve reducing unwanted noise by performing in-orbit satellite tests in satellite communication system.

Regarding **claim 10**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 2 and 7. Furthermore, Norin (817) further discloses that processing the recorded noise power measurements to generate a gain measurement of the transponder (column 3, lines 31 – column 4, lines 24 and Fig. 1, 2).

Regarding **claim 11**, Norin (817) and Norin (433) disclose the all the limitation, as discussed in claims 2 and 7.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Leopold et al. (US Patent number 6,269,242) discloses Dynamic Beam Fill-in System and Method Therefor.

Tong et al. (US Patent number 6,337,658) discloses Transmit Antenna Alignment Peak Search Method and Apparatus.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(703) 306-5936**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on **(703) 308-7745**. Any inquiry of a general nature or

relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
April 22, 2004

John J Lee

NICK CORSARO
PATENT EXAMINER